



Flight Line, Inc., fixed base facility at Gallatin Field.

VOL. 28, NO. 5

MILES CITY FLY-IN

The Miles City Hangar will sponsor a fly-in Sunday, June 26. The events will include a barbecue lunch, aerobatic show, remote controlled airplane show, hot air balloon, and contests for pilots.

For further information contact Lee Richardson, Secretary, 2201 Palmer, Miles City, MT 59301.

PILOT AWARDS TO BE GIVEN

Each year at the annual convention the Montana Pilot Association gives five major awards. The awards are given to deserving pilots within the state who have been nominated by one of the MPA Hangars.

The five categories are:

1. Senior Pilot of the Year
2. Junior Pilot of the Year
3. Outstanding Pilot of the Year
4. Bill Mathews Award (for physically handicapped pilot)
5. Bent Prop Award (for the humorous incident or accident this past year, to be taken in good fun)

Please send your hangar's nominations for any or all of the categories to the chairman of the awards committee at the address given below. Also include a resume of the person's flying career or other justification why the person should be considered by the committee.

Deadline for receipt of the information is June 15, 1977. DON'T YOU HAVE SOMEONE YOU THINK IS DESERVING OF ONE OF THESE AWARDS?

Send nominations to Jim Monger, P. O. Box 597, Belgrade, MT 59714.

MONTANA PILOTS ASSOCIATION ANNUAL CONVENTION

The Helena Hangar is hosting the annual MPA convention and has a full-scale program planned for everyone's entertainment June 17-19, 1977.

Many events have been planned in addition to the business meetings—everything at your own option. Choose one or several events you may wish to attend and pay for, or enjoy more free time browsing, sightseeing or shopping in Helena.

Registration will begin at noon Friday, the 17th, at the Knights of Columbus building across the street from the airport. This will be the convention center and transportation will be furnished to downtown motels every half hour. That day a trip into the wilderness area at the Gates of the Mountains will be provided. A boat trip is planned, seaplane rides will be available, and a no-host buffet supper will fill you up.

Saturday the business meeting will begin at 8:30 a.m. The ladies may attend a brunch if they wish. In the

MONTANA and the SKY



MONTANA DIVISION OF AERONAUTICS

MAY, 1977

afternoon those who care to may take a ride on the Last Chancer Tour Train which cruises about the city of Helena, stopping for brief visits at the Capitol, the Historical Museum, Last Chance Gulch, and Reeders Alley. You will enjoy taking pictures. A no-host cocktail hour will begin the evening festivities which includes a buffet style banquet and the pilot award presentations. Dinner entertainment will be provided by Magician Miles White, member of the Great Falls Hangar. You can finish off the evening with dancing to music by the Night Wind.

Sunday morning there will be a Fly-In breakfast from 8:00 a.m. to 12:00 sponsored by the Townsend Rotary Club at the Townsend Airport—paved 4,000 foot runway, just minutes from Helena, at the far end of beautiful Canyon Ferry

(Continued on Page 4)



One of the boats which will be used in the scenic ride through the Gates of the Mountains during the MPA convention.

**DEPARTMENT OF
COMMUNITY AFFAIRS**

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Harold A. Frysle, Director
Martin T. Mangan, Deputy Director**

**Official Monthly Publication
of the**

AERONAUTICS DIVISION

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Helena, Montana 59601

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1977

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THURBER'S  HELENA

LIVINGSTON FLY-IN

More news about the Livingston Fly-In July 24.

On Saturday the 23rd there will be 3¢ a pound rides over the city.

Sunday there will be sky jumpers, sail planes, antiques and homebuilts on display. During intermission there will be live Bluegrass music with nationally known lady fiddler Shelley Clark from Jackson Hole, Wyoming.

Trophies will be awarded to the one traveling the longest distance, the youngest pilot, the oldest pilot, the oldest license holder, the oldest antique aircraft, and the best homebuilt.

The 4-H will be serving hotdogs, pop and coffee from noon on.

Don't forget—July 23 and 24 in Livingston.

For further information call Sharon Matovich in Livingston (406) 222-0932.

Administrator's Column



I reported in our last publication that House Bill 363 which revised the aircraft registration law was passed by the 45th Legislature. A verbatim copy of the aircraft registration law was published in that issue.

I want to reemphasize that aircraft not based in Montana but entering Montana to engage in commercial operation must be registered prior to commencing commercial operation.

The aviation public will be happy to learn that the 45th Legislature reimbursed the Aeronautics Division for the cost of Governor transportation retroactive to July 1, 1974.

I was a guest of the Dillon MPA Hangar May 5. This meeting was held at the Joe Tezak Ranch south of Sheridan, Montana. I want to compliment the Tezaks for a beautiful, smooth turf strip. I thoroughly enjoyed visiting with the Hangar members and their families and the delicious pot luck dinner.

I again want to urge everyone to attend the state MPA Convention being held in Helena June 17-19. I think this will be a productive and enjoyable convention and you will especially like the Gates of the Mountains boat trip planned for Friday evening. Complete details regarding the convention will be found elsewhere in this publication.

Don't forget to plan to attend the Schafer Meadows Fly-In jointly sponsored by the MPA, Flying Farmers, 99's and Aeronautics Division. Don't let the one-hour work session on Saturday scare you off because you are welcome whether or not you wish to take part in the clean-up work.

To clarify obvious misunderstandings regarding the authorization given us by the 45th Legislature to trade the Queen Air in on a replacement airplane, an excerpt of House Bill 145 is printed below verbatim, however, I do want to emphasize that this bill merely authorizes us to purchase an airplane not to exceed \$180,000 plus trade-in of the Queen Air on a lease-purchase contract not to exceed six years.

We are not authorized any general fund or earmarked revenue fund moneys as the airplane must be paid for by those state agencies chartering the airplane through the airplane pool.

Following is the excerpt from House Bill No. 145 giving Aeronautics authorization to lease/purchase an aircraft.

"The Department of Community Affairs is authorized to contract for the purchase of a light twin engined aircraft. Total purchase price not to exceed \$180,000 plus trade in of the currently owned Queen Air, on a lease-purchase plan not to exceed 6 years. The funds are to be derived from aircraft user charges. Such authorization is subject to certification by the budget director that such purchase is feasible without general fund support on the basis of life-cycle costing."

ACCIDENT PREVENTION

FAA General Aviation District Office, Helena

Operation Lights On—This program is very effective not only on our highways but also in the air.

"Landing Lights On" reduces the possibility of bird strikes. Evidence indicated that birds are better able to see and avoid an aircraft, in the daytime, when bright lights, such as landing lights, are on.

"Landing Lights On" makes an aircraft more conspicuous thereby improving the "see" and "be seen" con-

cept of collision avoidance. It also makes it easier for a tower controller to spot an aircraft when operating in the vicinity of an airport.

Turn Your Landing Lights On When:

1. Operating within 10 miles of any airport, day and night
2. Operating in conditions of reduced visibility
3. Operating where flocks of birds may be expected.

LIGHT UP AND BE SEEN

PROJECT TRAFFIC SURVEY



By: Todd Wirthlin
Airport Planner

An element of the update system is to purchase and install aircraft traffic counters to non-towered airports across Montana. Eight such counters have been purchased which operate by an aircraft sensing loop.

What is an aircraft loop sensor? An aircraft loop sensor is a coil of wire embedded in the landing surface with two wire lead-ins routed to the detector. The loop and lead-ins are 16 gauge stranded electrical wire, silicone rubber insulated. The loop, being embedded in the landing surface, paved or turf, is tamper-proof and unaffected by weather conditions. The loop will detect aircraft even if it is under water, and virtually no maintenance will be required.

How does the aircraft loop sensor operate? The loop sensor is connected through a pair of lead-in wires to the counter's loop oscillator driver section. The detector will provide a method of tuning the loop resonant frequency to



the counter's frequency. An aircraft passing over the loop will effectively reduce the loop inductance. The resonant tank circuitry frequency will consequently increase. This frequency change is detected and amplified to energize a relay.

The accompanying pictures show a testing loop taped to a taxiway at the Helena airport. A 150 Cessna is used to test the loop.

In the time the loop was operating the aircraft counter monitored aircraft

from Cessna 150 size all the way to the size of a Boeing-727.

This program will help airports across the state with developing solid data of aircraft operations and help produce a realistic forecasting formula.

If any persons are interested in more information on this project or want consideration for a counter to be put on their airport, please feel free to contact the Aeronautics Division, P. O. Box 5178, Helena, MT 59601, telephone 449-2506.



Lake Buccaneer amphibious aircraft which will provide seaplane rides at the MPA convention.

(Continued from Page 1)

Lake. The Helena Glider Club will be offering glider familiarization rides at the Townsend Airport all day Sunday in a Schwitzer S-233, two-place glider towed to 2,000 feet by a Cessna 182. (No cost available at this time.)

Registration is requested before June 8 so the committee can be sure to have enough food and transportation available. Ample free aircraft tiedowns will be provided. For those pilots vacationing by camper, the Branding Iron Campground is located just one-quarter mile from the convention center and has full facilities (phone 442-1821). Please make your own motel reservations. The Coach House Motor Inn has a toll-free long distance number—800-332-3409.

Registration fee for the convention is \$12.00 single, \$22.50 per couple, which includes transportation to motels, bus ride to Gates of the Mountains boat docks, all convention hall facilities, Saturday evening dinner and dance. Boat trip cost is \$3.00 for adults, \$1.50 for children; chicken dinner on the boat, \$2.75 for adults, \$1.75 for children; seaplane rides \$3.50 each; Last Chancer Tour Train, \$1.75 for adults, \$1.25 for children. Mix or match your own package. Come and have fun.

Please make your registration checks payable to the Helena Hangar.

For additional information contact Glen Kenney, 2021 11th Avenue, Helena, MT 59601, phone 443-2225 during the day, or 443-4428 at night; or John Serquina, at 449-3638 during the day, 442-9401 at night.

AVIATION EDUCATION



By: Sam Griggs, Supervisor

This winter's educational endeavors are finally winding down. The Carroll College Private Pilot Ground School with 18 enrollees terminated Wednesday, May 4.

The Helena Adult Evening Division Private Pilot Ground School, with over 50 enrollees, will come to a close Thursday, May 12.

The Helena High School Aviation Class with 18 students will continue through most of the month of May.

Out of the 18 students at the high school, ten are taking flight training in a Cessna 150 owned by one of the student's father, Henry Anderson. They will finish their training at one of the two local fixed base operators.



Sam Griggs, Instructor, and his Helena High School aviation class in front of the Cessna 150 used for pilot instruction.



Janet Baumgartner learning the instrument panel from Instructor Sam Griggs.



Sam Griggs explaining the flight instruments to Bill Anderson, student pilot.



Mark Mueller talking to ground control before leaving for flight training.

GUNS AND AIRLINES

By: Wally Allen, Inspector
FAA Air Transportation Security

For a few years now we have all heard that guns can't go on the commercial airplanes with the passengers. The history of hijacking and the very evident display of security at the airports make every traveler well aware of this. The reason to keep guns out of every passenger's reach is obvious.

This does not mean that a competitive shooter, collector or hunter can't take his weapon with him. The question is how is this done keeping safety and legality in mind?

First, everyone merely has to apply a little logic and common sense. Remember that local laws apply at all times. If local communities or states require a shotgun to be in the car trunk unloaded and the action held open, you'll have to comply with this on the way to and from the terminals.

We all know things go easier with a little prior planning. So, if you inform the airline when you make reservations, they will be happy to brief you on the procedures.

This brings up the first regulation you must comply with. You must declare the fact that you have a weapon in your luggage and that it is unloaded.

The airline may inspect or ask you to prove that it is unloaded as you check the bag. Safety during this procedure must be exercised. A crowded terminal is no place to have an accidental discharge. The airline will probably now tag your baggage or gun case with a very vivid fluorescent string tag. No matter how valuable or fragile you declare the gun, the airline is bound by regulation to transport it as checked baggage.

The second requirement in transporting your weapons is one which you should also be prepared for. The requirement states that most bags or cases must be locked and only the passenger has the key. Although many of the carrying cases on the market offer excellent protection against damage to weapons, they do not provide a method of locking them. Now is the time to alter them in some way so that a good, well made padlock can be attached. This is just good security for any gun case or pistol box.

The last thing (but not the least) is to know the local requirements at your destination.

A long awaited for hunting trip could become a complete disaster if, upon arrival, you found out that a local law was violated. Ask someone at your planned destination to get the facts from the local law enforcement agency well in advance. Handguns and their complex regulations are particularly touchy subjects in many states and communities.

What about ammunition? Probably the best solution is to wait until you get to your destination and purchase it there. If you insist upon carrying along your own, you've got more regulations to contend with. The regulation says that small arms ammunition for personal use by a passenger in his checked baggage may be carried if packed in fiber, wood or metal boxes. Don't rely on the fact that those shells are in their original factory packed box. Remember that they came to your sporting goods store in a larger shipment and met all the requirements for bulk shipments. That small package of shells may not meet aviation transportation requirements.

Reloaders will have serious problems under these conditions if they do not check with the airlines in advance. The black powder buffs should just give up the whole idea of moving powder and caps. The problems involved just aren't worth the effort. Even if you have to pay

twice as much on the far end for the same amount.

It may sound discouraging but with a little notification to the airlines, good safety, locking your case and checking with the local law enforcement folks, everything can be done without any real hassle.

CENTERLINE



By: Jim White, Chief
Air Transportation Bureau

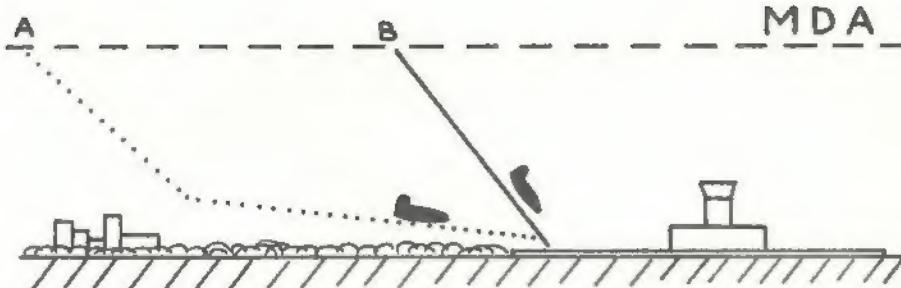
VISUAL DESCENT POINT

The VDP is certain to be welcomed by all instrument pilots who frequently make straight-in non-precision (no glide slope) instrument approaches. The Visual Descent Point is a specified point on final approach, electronically marked by either a DME fix or a 75 MHz marker beacon.

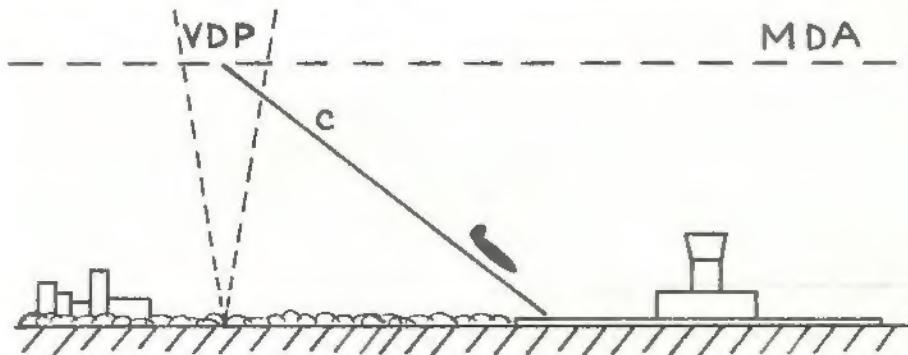
For the pilot on a non-precision approach the VDP provides a definite point to which he should proceed at or above the minimum descent altitude. It also identifies the point in his approach from which he can make a normal descent (about three degrees) to the touchdown point on the runway—if he has visual contact with the runway, lights, etc. If he reaches the VDP and does not see the ground, a missed approach is likely.

In the past the pilot flying a non-precision approach has had to rely on his experience and judgment to determine when he reached that point where he should be able to begin a normal descent to the runway by reference to the ground. Consequently this type of approach has been marked by many early or late descents from the minimum descent altitude.

FAA is proceeding with the designation of VDP's on certain approaches, and funds have been budgeted for additional DME's and 75 MHz markers



When a pilot on a nonprecision instrument approach descends to his minimum descent altitude, he may be able to see the ground below but not the airport ahead. Consequently he may be tempted to begin his final descent to land prematurely, resulting in an excessively low approach (A); or he may begin late, resulting in an overly steep approach (B). The Visual Descent Point signal will tell him the proper moment to initiate the final descent with a normal glide angle (C).



to identify such points. The first VDP's are expected to appear on charts within three months.

The first chartings will probably be DME fixes placed at locations where VORTAC's are presently in service. In general 75 MHz fan markers will be used for NDB approaches when no VORTAC is installed and where DME is not practical.

Neither the capability to receive the Visual Descent Point nor its use will be mandatory for an approach, even though a VDP has been specified for that particular procedure. If the airplane is not equipped to receive the VDP the pilot simply flies the approach as though no VDP had been provided.

The pilot needs no special technique to use the VDP. The approach is flown as always from the final approach fix to the landing (or to the missed approach point).

The only difference is that with the VDP the pilot will be able to pinpoint precisely that spot from which he can make a normal three degree descent to the touchdown point on the runway.

AERONAUTICS



By: Date Uppinghouse
Accident Prevention Specialist
Billings FAA GADO 1

There is a sudden rekindling of interest in aerobatics. Some of us older "geezers" wonder why anyone wants to hang upside down in an airplane with all of the dirt from the floor of the cockpit dumped into our eyes and mouth. Nevertheless, like CB radios, aerobatics appear to be with us for a while. Too, there are some good reasons for knowing something about how to recover from extreme positions.

Maybe we should discuss the subject.

The first step is to find an instructor familiar with aerobatics. Your everyday flight instructor may be one of the best, but chances are he never learned aerobatics. It may take some doing to find an experienced acrobatic instructor, but it's the only way to go.

Now shall we use our own normal category airplane to learn aerobatics? Airplanes built to normal category must be built to stand about 4 positive "Gs" and 1½ negative "Gs". If a pilot tries to hurry recovery from a loop as he sees the redline approaching, he is apt to pull close to the positive load limit. A clumsy slow roll will put the airplane at or exceeding the negative limit. Some of the other maneuvers, of course, place far more stress on the structure. Most pilots are aware of these facts and if they intend to do aerobatics they look around for an acrobatic airplane.

If you or I were to build an airplane for aerobatics we would first beef it up, right? That's fine, except beefing it up adds weight. We must beef it up more because of the added weight. That adds more weight. Now it needs more power. More strengthening, more power and more weight. It's easy to end up with a lead sled.

Next we come to the airfoil for the wings. A good high lift airfoil turned upside down continues to lift very well (in the wrong direction). We will probably go to an airfoil that has less positive lift and that can be flown better inverted. Finally we have a bird that does flip flops without losing its feathers. It surely isn't the light and agile little bird that it would have been if built to normal category standards, however. It needs plenty of maneuvering room. Most amateur (and many professional) acrobatic pilots who have gotten into trouble, did so because they didn't leave enough room at the bottom.

It follows that anyone contemplating aerobatics should:

1. Find a knowledgeable aerobatic flight instructor.
2. Make sure the aircraft is actually stressed for aerobatics.
3. Begin and end all maneuvers with lots of altitude.



FLIGHT INSTRUCTOR REFRESHER SEMINAR

By: Jack Wilson, Chief
Safety and Education Bureau

The annual Montana Aeronautics Division sponsored Flight Instructor Refresher Seminar was held in Helena at Jorgenson's Holiday Motel on April 25-29, 1977. The ground school was held April 25, 26 and 27 and consisted of a workshop in which participants used a workbook with questions and filled in the answers. This process appears to be much better than having someone stand and lecture for 24 hours presenting various aspects and types of subjects, and the students sitting there trying to stay awake.

Following the ground school which was finished the afternoon of the 27th, the flight portion started under the tutorage of designated pilot examiners from throughout Montana who each had four students and flew them two at a time, giving them the latest information on maneuvers and methods of flight instruction. During this period also, the local General Aviation District Office personnel gave flight checks to those flight instructors who required reinstatement and /or renewal.

The weather was ideal this entire period and apparently the seminar was informative as well as allowing renewal of the flight instructors' certificates.



CALENDAR

June 1—Yellowstone Airport Opening.

June 4—Montana-Alberta Combined Fly-In for 99's, Sweetgrass.

June 10-12—Flying Farmer Fly-In, Seeley Lake.

June 17-19—Montana Pilots Association Annual Convention, Helena.

June 26—Miles City Fly-In and Barbeque, Miles City Hangar, MPA.

June 26—Flying Farmer Fly-In and pot luck lunch, Strout Home, Moccasin. (Note change in date from last issue.)

July 16-17—Combined MPA, Flying Farmer, 99's, Aeronautics Division Fly-In, Schafer Meadows.

July 16-August 4—National Parachuting Championships, Tahlequah, Oklahoma.

July 21-22—Montana Aeronautics Board Meeting, Yellowstone Airport, West Yellowstone.

July 24—Fly-In Air Show, Livingston.

September 30-October 1—Montana Flying Farmer Convention, Billings.



NEW AVIONICS SHOP AT GALLATIN FIELD.

Jim and Ella Walsh are the owners of the new avionics shop located in the Flight Line, Inc. building at Gallatin Field. J & E AVIONICS feature sales, installation and service on aircraft radio and navigation equipment. Their operation is FAA approved and offers sales and warranty work on many of the major equipment lines.

CONGRATULATIONS



FAA CERTIFICATES ISSUED RECENTLY TO PILOTS

STUDENT PILOT

Herbert A. Olson, Laurel
Mary Ann Love, Three Forks

PRIVATE

Earl L. Norcutt, Glasgow
John A. Stratman, Malta
Harold R. Moran, Savage
Jeffrey A. Landers, Miles City
Thomas W. Helm, Rock Springs
Robert L. Meidinger, Miles City
Melvin A. Barber, Billings

Dorothy K. Curtis, Billings
Richard R. Berg, Great Falls
Bruce W. Novark, Bellevue, WA
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